The North Carolina Renewable Energy Portfolio Standard

And Its Significance for NC Forest Landowners

On August 3rd 2007, the North Carolina General Assembly adopted a Renewable (energy) Portfolio Standard through passage of Senate Bill 3-2007.[1] Unlike Green Power programs such as NCGreenPower (www.ncgreenpower.org) that use voluntary donations by utilities' customers to make available renewable-based electricity, Renewable Portfolio Standards (RPS) require that a certain percentage of a utility's overall energy sales must be derived from renewable resources. Portfolio Standards most commonly refer to electric sales measured in megawatt-hours (MWh), as opposed to electric capacity measured in megawatts (MW). RPS provisions vary by state. North Carolina and Texas are the first two states in the Southeast to enact RPS legislation.

Why a Renewable Portfolio Standard?

The decline in fossil fuel availability and the rising costs of extraction and transportation, combined with increasing demand in industrializing countries, as well as concerns about global climate change are all contributing to increased interest in renewable energy in the U.S. Coal accounts for about three fifths of the electricity generation in North Carolina. Mercury, sulfur, and nitrogen compounds released into the atmosphere from coal combustion have come under fire in the region and world. Displacement of coal through an RPS could reduce each of these concerns by using a state-based "home-grown" fuel. Key economic and social benefits of an RPS result from having NC supply its own needs, potentially keeping millions of dollars in state that can have multiplying effects throughout local communities.

Key NC RPS Provisions

The North Carolina RPS is a complex piece of legislation that spells out provisions for use of renewable energy sources, energy efficiency measures and energy demand reductions. The legislation requires all investor-owned utilities in the state to displace 12.5% of 2020 retail electricity sales, with a minimum of 7.5% renewables-based in state generation and 5% or more in energy efficiency measures. Municipal utilities and electric cooperatives must meet a target of 10% renewables and energy efficiency by 2018 under slightly different rules. The bill also provides for improved net metering, interconnection standards, and values the use of combined heat and power (CHP) technology.[2] The key provisions of the bill are that by the year 2021 and thereafter 12.5% of 2020 North Carolina retail sales by public electric utilities must come from a combination of renewable energy-based generation and energy-saving measures.

NC Woody Biomass
"Nature's renewable energy!"

http://www.ces.ncsu.edu/forestry/biomass.html

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Eligible Renewable Energy Sources

Eligible energy resources include solar-electric (photovoltaics), solar thermal (such as solar hot water and heating), wind, hydropower up to 10 megawatts (MW), ocean current or wave energy, biomass from farms and forests, landfill gas, waste heat from renewables, and hydrogen derived from renewables. There are small specific minimum requirements for solar and energy from swine and poultry wastes. However, it is expected that as much as 60% or more will be met using woody biomass produced from the forest residues.

Woody Biomass Source

Most wood processing and manufacturing mill waste such as sawdust, bark, and shavings are already used for energy internally in those facilities. New woody biomass-based energy under the RPS will come directly from the forest thinning and logging activities. Examples include logging residues such as slash (unused limbs and tops) and standing otherwise un-merchantable stems that are left on site after logging. In cases where pulpwood markets are non-existent or minimum, wood normally harvested as pulpwood may be used. An estimated 8 million green tons of woody biomass can be sustainably harvested in North Carolina annually. Much of the biomass energy for the RPS will come from mixing wood with coal (co-firing) at existing utility-owned power plants or in dedicated privately owned power plants that predominantly burn biomass.

How Does Forestry Benefit?

Benefits to the state's forests, landowners, industry, and loggers are expected to include:

- Reduced site preparation costs for regeneration
- Improved opportunity to manage for high-value timber products by providing markets for thinnings and other lower-value stems
- Improved forest health by providing markets for diseased and damaged trees, off-site species, and density management

What Businesses/Industries Will Benefit from the North Carolina RPS?

A Renewable Energy Credit or REC is a tradable instrument that results from the generation of one megawatt hour of electricity or equivalent energy supplied by a renewable energy facility. Of special importance to industry is the opportunity to generate RECs through combined heat and power (CHP) applications. Combined heat and power (CHP), also known as cogeneration, is an efficient, clean, and reliable approach to generating power and thermal energy from a single fuel source. Where that fuel is a qualified renewable resource, both the electric power generated and the excess heat qualify as RECs. The value of these RECs will be shared by those in the fuel-supply chain and can also financially benefit farmers, forestland owners, and loggers.

As much as 60% or more of eligible renewable energy sources could be met using woody biomass from forest residues.

Other Benefits of the NC RPS

The NC Sustainable Energy Association[3] estimates that the legislation may result in:

- $2.5 billion in new renewable energy investments by year 2018 and $350 million in energy efficiency investments by year 2021.
- Eliminate the need for about 1,800 megawatts of coal and nuclear power plants
- Creation of 2,700 annual jobs at good wages statewide
- Reduction of greenhouse gas emissions by at least 13 million metric tons by 2018

References

[1] NC General Assembly, Session Law 2007-397, Senate Bill 3 http://www.ncga.state.nc.us/Sessions/2007/Bills/Senate/PDF/S3v6.pdf

[2] Database of State Incentives for Renewables & Efficiency http://www.dsireusa.org/library/includes/map2.cfm?CurrentPageID=1&State=NC&RE=1&EE=1

[3] NC Sustainable Energy Association http://www.ncsustainableenergy.org/

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